

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF TEXAS  
DALLAS DIVISION**

FILED

MAR - 6 2012

CLERK, U.S. DISTRICT COURT  
By M. J.  
Deputy 1:05 p.m.

**GENERAL ELECTRIC COMPANY,**

***Plaintiff,***

V.

**mitsubishi heavy industries,  
LTD., and mitsubishi power  
systems americas, inc.,**

***Defendants.***

**Civil Action No. 3:10-CV-00276-F**

## JURY TRIAL DEMANDED

**PLAINTIFF GENERAL ELECTRIC COMPANY'S MOTION FOR JUDGMENT AS A  
MATTER OF LAW OF DIRECT INFRINGEMENT**

Plaintiff General Electric Company (“GE”) hereby moves pursuant to Fed. R. Civ. P. 50(a) for judgment as a matter of law that Mitsubishi Heavy Industries, Ltd., and Mitsubishi Power Systems America, Inc. (collectively, “Mitsubishi”) directly infringed claim 1 of U.S. Patent No. 7,629,705 (“the ’705 patent”) during commissioning of the five wind farms at issue in this lawsuit.<sup>1</sup>

## I. LEGAL STANDARD

Under the Federal Rules, judgment as a matter of law is appropriate when “a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on the issue.” Fed. R. Civ. P. 50(a).

To prove direct infringement of a method claim, the patentee must show by a

<sup>1</sup> The wind farms are Juniper Canyon, Elm Creek II, Taloga, Peñascal, and Pinnacle.

preponderance of the evidence that a defendant has practiced each and every step of the patented method. *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1359 (Fed. Cir. 2008).

**II. MITSUBISHI PERFORMS EACH AND EVERY STEP OF CLAIM 1 WHEN IT COMMISSIONS ITS 2.4 MW WIND TURBINES IN THE UNITED STATES**

As indicated in Exhibit A, GE has presented more than sufficient evidence at trial to demonstrate by a preponderance of the evidence that Mitsubishi practices each and every step of claim 1 when it performs the commissioning process for its 2.4 MW wind turbines.

Moreover, GE has demonstrated by a preponderance of the evidence that each of the infringing uses of the claimed method occurred after issuance of the '705 patent. The Peñascal II, Elm Creek II, Juniper Canyon, Taloga, and Pinnacle wind farms were all commissioned within the United States after December 8, 2009. PTX-447; PTX-448.

**III. MITSUBISHI HAS NOT PRESENTED SUFFICIENT EVIDENCE TO AVOID A FINDING OF INFRINGEMENT AS A MATTER OF LAW**

There is insufficient evidence in the record for a reasonable jury to conclude that Mitsubishi does not practice the steps of claim 1. None of the evidence in the record, even when viewed in the light most favorable to Mitsubishi, supports a legally sufficient claim of non-infringement. All of the evidence Mitsubishi has offered regarding the functionality of its 2.4 MW machine can be easily grouped into three arguments, each of which the Court has already found insufficient as a matter of law to establish non-infringement.

**A. Mitsubishi's Assertions Regarding No PLL State Machine**

The Court ruled that as a matter of law, claim 1 does not require use of a PLL state machine. Thus, all of the evidence offered by Mitsubishi that gains and limits in its PLL do not change is irrelevant to the question of infringement, and therefore, the portions of testimony from Mr. Olea, Dr. Ehsani, and Dr. Grady concerning whether PLL gains and limits change is legally

insufficient to establish non-infringement. *See* [Olea Trans.]; 3/5/12 Trial Tr. (P.M.) at 9:2-9; 3/1/12 Trial Tr. (A.M.) at 13:6-14:6.

**B. Mitsubishi's Assertions Regarding Steps Allegedly Being Performed Outside the United States And/Or Prior To Issuance Of The Patent**

The Court has also ruled that, as a matter of law, the accused conduct takes place during commissioning of the turbines, and Mitsubishi cannot argue the location or timing of the manufacture or assembly of various components within the Nacelle as an alleged basis for noninfringement. 3/5/12 Trial Tr. (P.M.) at 4:11-5:2. Therefore, evidence offered by Mitsubishi concerning where the software for the machine is installed, and where the nacelles are assembled and installed, does not provide a basis for the jury to find non-infringement. Similarly, evidence that the software was programmed and/or the nacelles were manufactured and shipped before the issuance of the patent is irrelevant.

**C. Mitsubishi's Assertions Regarding Mitsubishi's Use of a Smart Crowbar**

The fact that Mitsubishi's turbines use a smart crowbar does not implicate the infringement analysis. First, Mitsubishi has not identified a single method step that is avoided by use of a smart crowbar. The use of a crowbar is irrelevant to the issue of infringement of claim 1. Mitsubishi's expert, Dr. Ehsani, admitted as much in his expert report, as he had to concede during his cross-examination yesterday. 3/5/12 Trial Tr. (P.M.) at 39:20-41:3.

Second, and perhaps more importantly, the Court precluded this avenue of reasoning when it held as a matter of law that the sale of GE 1.5 MW wind turbines prior to October 20, 2005 was an offer for sale of the invention of claim 1. It is undisputed that GE's 1.5 MW wind turbine includes a crowbar. 3/1/12 Trial Tr. (P.M.) at 16:14; 3/5/12 Trial Tr. (P.M.) at 39:17-19. Thus, Mitsubishi cannot argue now, after having obtained partial summary judgment, that it may avoid infringement by using a crowbar.

#### IV. CONCLUSION

There is no legally sufficient basis for a jury to conclude that Mitsubishi does not infringe claim 1 of the '705 patent. Therefore, judgment as of a matter of law should be granted.

Date: March 6, 2012

Respectfully submitted,

s/ Carmen E. Bremer

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**ATTORNEYS FOR PLAINTIFF GENERAL  
ELECTRIC COMPANY**

**EXHIBIT A**

<b>Claim Language</b>	<b>Commissioning the Mitsubishi 2.4 MW Wind Turbine</b>
1. A method for operating an electrical machine, said method comprising:	Dr. Grady testified that the Mitsubishi 2.4 MW wind turbine contains a doubly-fed induction generator (“DFIG”) that can convert mechanical energy to electrical energy. 3/1/12 Trial Tr. (A.M.) at 71:11-15.
coupling the electrical machine to an electric power system such that the electric power system is configured to transmit at least one phase of electric power to the electrical machine; and	Dr. Grady also testified that this DFIG generator is connected to the grid, which is an electric power system. 3/1/12 Trial Tr. (A.M.) at 71:16-74:8; PTX-68.00029.  And Dr. Grady also testified that this step occurs during commissioning, which is done by Mitsubishi. 3/1/12 Trial Tr. (A.M.) at 75:1-76:5; <i>see also</i> PTX-83.0008 (Mitsubishi commissioning manual).
configuring the electrical machine such that the electrical machine remains electrically connected to the electric power system during and subsequent to a voltage amplitude of the electric power system operating outside of a predetermined range for an undetermined period of time, said configuring the electrical machine comprising:	Dr. Grady testified that the Converter Controller Unit (“CCU”) in the Mitsubishi wind turbine has software which defines the operating range of the turbine, including the capability of the turbine to stay connected to the grid during and subsequent to a voltage amplitude of the electric power system operating outside of a predetermined range for an indeterminate period of time. 3/1/12 Trial Tr. (A.M.) at 76:20-78:18; <i>see also</i> PTX-126.00067 (April 5, 2010 Ingeteam Firmware Manual).  Dr. Grady testified that the machine is set up to ride through these voltage amplitudes during commissioning by Mitsubishi, and specifically upon startup and execution of the CCU. 3/1/12 Trial Tr. (A.M.) at 78:19-80:6; PTX-83.00013.
electrically coupling at least a portion of a control system to at least a portion of the electric power system;	Dr. Grady testified that CCU is coupled to the grid during commissioning by Mitsubishi, as evidenced by the fact that the CCU is receiving measurements of the grid voltage. 3/1/12 Trial Tr. (A.M.) at 81:2-83:8; PTX-68.00074.
coupling the control system in electronic data communication with at least a portion of the electrical machine; and	Dr. Grady testified that the CCU is coupled in two-way data communication with portions of the generator such as the inverter during startup of the CCU when Mitsubishi commissions the machine. 3/1/12 Trial Tr. (A.M.) at 83:25-85:25; PTX-68.00029; PTX-68.00070; PTX-83.00013.
configuring [setting up] the electrical machine and the control system such that the electrical machine remains	Dr. Grady testified that the CCU in the Mitsubishi 2.4 MW wind turbine has software which defines the operating range of the turbine, including the capability of the turbine to stay connected to the grid during and subsequent to a voltage amplitude of the

<b>Claim Language</b>	<b>Commissioning the Mitsubishi 2.4 MW Wind Turbine</b>
<p>electrically connected to the electric power system during and subsequent to the voltage amplitude of the electric power system decreasing below the predetermined range including approximately zero volts for the undetermined period of time thereby facilitating zero voltage ride through (ZVRT).</p>	<p>electric power system including down to zero volts for an indeterminate period of time, thereby enabling zero voltage ride through. 3/1/12 Trial Tr. (A.M.) at 86:15-87:17; PTX-126.00067</p> <p>Dr. Grady also testified that the CCU is configured to suspend firing of the rotor side converter during a zero voltage event while the smart crowbar is active. 3/1/12 Trial Tr. (A.M.) at 87:18-89:6; PTX-148.0001-2.</p> <p>Dr. Grady testified that the machine and CCU are set up to perform zero voltage ride through during commissioning by Mitsubishi, and specifically upon startup and execution of the CCU. 3/1/12 Trial Tr. (A.M.) at 89:7-89:16; PTX-83.00013.</p> <p>The ability of the Mitsubishi generator to ride through three-phase zero-voltage events of an indeterminate or unknown duration was verified by field testing in 2009. 3/1/12 Trial Tr. (A.M.) at 89:17-91:11; PTX-116.0006, 12-13.</p> <p>Furthermore, Mr. Ayagi testified that the Mitsubishi wind turbine can ride through zero-voltage events of an indeterminate or unknown duration up to 150ms. [Ayagi Trans. at 25:11-27:12]</p> <p>[And Mitsubishi's own expert, Dr. Ehsani admits that the Mitsubishi wind turbine stays synchronized with the grid during ZVRT events. 3/5/12 Trial Tr. at 8:19-22.]</p>

**CERTIFICATE OF SERVICE**

The undersigned certifies that the foregoing document was served on March 6, 2012 on all counsel of record via the Court's ECF system.

s/ Carmen E. Bremer

Carmen E. Bremer